- - This application claims the benefit of the filing date of U.S. Provisional Patent Application Ser. No. 60/239,187, filed October 9, 2000. - -

Please replace the second full paragraph on page 7 with the following:

- - In my prior U.S. Patent No. 5,567,672, I describe levitating a magnet above a superconducting element in a cryostat, which contains the cooling source used to cool the superconducting element. This arrangement could possibly be used as part of a system for mixing temperature sensitive fluids, such as cell suspensions or blood, as disclosed herein. However, the resultant increased separation created by the double wall vacuum gap may decrease the stability and the load capacity of the levitating magnet. This may limit the applications in which this arrangement is useful, and could especially preclude use with particularly viscous fluids or with the large volumes of fluid typically present in commercial scale operations. - -

Please replace the second full paragraph on page 9 with the following:

- - To meet these needs, and in accordance with a first aspect of the present invention as described herein, a number of systems that are capable of pumping or mixing fluids, including temperature sensitive fluids, using a magnetic bearing, impeller, rotor or other element or device capable of generating a pumping or mixing action in a fluid (hereinafter generically referred to as a "magnetic bearing') levitated by a superconducting element are disclosed. The magnetic bearing may be placed in a vessel positioned adjacent to the wall of a cryostat or other housing for the superconducting element. A separate cooling source thermally linked to the superconducting element provides the necessary cooling to create the

desired superconductive effects and induce levitation in the magnetic bearing. The cryostat outer wall or other housing may define a chamber around the superconducting element. This chamber thermally isolates the superconducting element from the vessel containing the bearing. To minimize thermal transfer from the superconducting element to the outer wall or housing, this chamber is preferably evacuated, but may be instead filled with an insulating material. This thermal isolation and separation means that the superconducting element may be placed in close proximity to the outer wall of the cryostat or other housing adjacent to the vessel to achieve a significant reduction in the separation distance between the levitating bearing and the superconducting element. This advantageously enhances the magnetic stiffness and loading capacity of the bearing as it levitates. However, since the superconducting element may be thermally isolated from the wall or housing, the magnetic bearing, and hence the vessel and fluid contained therein, are not exposed to the cold temperatures required to generate the desired superconductive effects. By using means external to the vessel to rotate one of the levitating magnetic bearing or the superconducting element, the desired pumping or mixing action is provided. - -

Please replace the first full paragraph on page 30 with the following:

- - Reference is now made to Figure 1, which shows a first possible embodiment of the mixing or pumping system 10 of the present invention. In this embodiment, a cryostat 12 is used to hold the cooling source for the superconducting element that produces the desired levitation in a pumping or mixing element or device, which as shown in the form of a magnetic bearing 14. The bearing 14 is placed in a vessel 16 positioned external to the